

## 1990 ADDITIONS TO THE ANNOTATED LIST OF THE INSECTS OF MACAU<sup>1</sup>

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**ABSTRACT:** One Orthoptera, 18 species of Coleoptera, 6 Diptera, 12 Heteroptera, 17 Lepidoptera and 1 species of Neuroptera are listed from Macau. The majority of species were collected on the outside walls, ceilings or on the floors of buildings comprising the University of East Asia campus on the island of Taipa during early morning hours.

The insect fauna of Macau is believed similar but not identical with that of the better known fauna of Hong Kong or those of its many associated islands. The species reported here were found during 1990 but had not been observed on buildings during the previous year (Easton 1991), either because populations were very low during 1989 or some species may develop on a 2-year cycle. Not all of the species found in Macau have been reported in Hong Kong, e.g. the cerambycid beetle, *Imantocera penicillata* (Hope) (personal communication, C. Lau).

The campus buildings are connected by walkways that are illuminated at night and insects found were those that remained either on the ceilings, walls or the floors on the outsides of the structures until early morning. Sites listed in this study include buildings such as Block I, Block III, Tai Fung, K.C. Wong and the library as well as areas connecting buildings such as the skyway lobby, classroom CLG 401 and the temporary classroom corridor. Identifications were carried out with the aid of Hill *et al.* (1982), Hill and Cheung (1978) and Hill (1982) and collected material has been compared with identified specimens in the Agriculture and Fisheries entomology collection, Hong Kong, as well as Bishop Museum in Honolulu, Hawaii. Common names have been taken from Hill and Cheung (1978), Hill (1982) and Hill *et al.* (1978) for Hong Kong.

### LIST OF SPECIES

#### ORTHOPTERA

##### Tettigoniidae

*Mecopoda elongata* (L.) large leaf grasshopper, 23 November, outside of library; 24 November inside Block I building.

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## HEMIPTERA

## Coreidae

*Leptocorisa acuta* (Thunberg), rice bug, 26 October, skyway lobby. This bug is found commonly attracted to lights in Hong Kong during July (Hill *et al.* 1982).

## Largidae

*Physopelta gutta* Burmeister, 20 February outside CLG 401 classroom. Even though adults are attracted to lights, all nymphal stages have been observed feeding on the seeds of *Mallotus paniculatus* trees during February. The fruits of this tree fall to the ground in late fall and some remain caught in the lower foliage of the trees. First instar nymphs were observed feeding on the seeds on the ground while older stage nymphs and adults climb trees and feed on seeds caught in lower branches. Mating of adults was also observed at this time.

## Lygaeidae

*Metochus unguittatus* Thunberg, 10 November on ceiling of Tai Fung Bldg.

## Pentatomidae

*Calliphara nobilis* (Linnaeus), blue shield bug, 19 August on wall of Tai Fung Bldg. Immature and adults of this species have since been observed feeding on the fruits of wild figs on the island of Coloane.

## Pyrrhocoridae

*Dindymus rubiginous* (Fabricius) 31 October, 3 November, 10 and 19 December on trunks of trees and ground on the Guia (lighthouse) hill in Macau. Insects were observed feeding on others of their kind and one specimen was noted feeding upon an ant.

## Reduviidae

*Triatoma rubrofasciata* (DeGeer), 14 July on bottom floor of Block III building under a rock used by maintenance workers to brace a door. This bug is reported to feed on murine blood in Hong Kong (Hill, 1982) and in Macau the insect was found in an area frequented by *Rattus rattus*. Hill (1982) also believed it to feed on man in rural areas.

## HOMOPTERA

## Cicadidae

*Cryptotympana mandarina* Distant during June on floor outside of Tai Fung building. Hill and Cheung (1978) referred to this species in their book as *C. mimica* Walk. (Males have a triangular opercula) but in a recent revision of the genus by Hayashi (1987) *C. mimica* is now considered to be a junior synonym of *C. mandarina* (personal communication, J.P. Duffels). Easton (1991) listed another closely related species from Macau in this genus as *C. pustulata* (Fabr.) but according to Hayashi (op. cit.) the correct name should now be *C. atrata* (Fabr.) (males have a rounded opercula but are otherwise similar to *C. mandarina*). The exuviae of both species as well as malformed adults have been found near the base of *Casuarina equisetifolia* and *Acacia confusa* trees in a cemetery on Taipa island suggesting that the roots of these plants serve as food for nymphal development.

*Gaeana maculata* Walker, spotted black cicada, 25 March in woods of Siac Pai Van near park operated by the Agriculture and Forestry department on Coloane Island. This species is one of the earliest to emerge from the ground in the spring (earlier than *Cryptotympana* above) but individuals have not been observed on the island of Taipa suggesting a different food preference for the nymphs.

*Platyleura hilpa* Walker, the spotted brown cicada, 9 June, 3 August on floor outside of Tai Fung building. This species has been observed to emerge from the ground a little later in the season than *G. maculata* and during the time when both species of *Cryptotympana* were active. Nymphs have been observed emerging at night (9:00-10:00 p.m.) near the trunks of *C. equisetifolia* trees on the edge of the campus. The winged remains of this species were often found lying on the ground in the vicinity suggesting that it serves as a food source for *Suncus murinus*, a common insectivorous small mammal on the island.

#### Flattidae

*Lawana imitata* (Melichar), 21 August ex longan fruit trees, *Euphoria longan* near Siac Pai Van on Coloane Island, Pun Wing Wah, leg.

#### Fulgoridae

*Fulgora candelaria* (Linnaeus), lantern-fly, 21 August on trunks of longan fruit trees on Coloane Island, 19 December from same host on Guia hill on the Macau peninsula. This insect is also common on the trunks of lychee fruit trees (*Litchi chinensis*) that are less common in Macau but are widely grown in the neighboring Guangdong Province of China. Hill and Cheung (1978) and Lee and Winney (1981) list this insect under the genus *Pyrops* but recently Chinese authorities have classified it as a species of *Fulgora* (Economic Insect Fauna of China, Fascicle 36, 1985, Homoptera, Fulgoroidea, Beijing).

*Fulgora rathburii* Kirby, 31 August, nymph on trunk of *C. equisetifolia*, the horsetail tree on the island of Taipa.

#### NEUROPTERA Ascalaphidae

*Hybris subjacens* (Walker), 21 May under street lamp on campus, 24 May on wall of Tai Fung building. Hill *et al* (1982) reported it as regularly occurring in Hong Kong.

#### LEPIDOPTERA Amathusiidae

*Faunes eumeus* (Drury), the common faun, 7 April on hiking trail on summit of Coloane Island.

#### Arctiidae

*Nyctemera plagifera* Walker, 17 December on outside of classroom, CLG 401.

#### Danaidae

*Danaus similis* (Linnaeus), the blue glassy tiger, 25 March in Agricultral Park on Coloane Island. This species has been found congregating on tree foliage during colder periods in December along a hiking trail on Coloane Island.

### Geometridae

*Obeidia tigrata*<sup>3</sup>, the brown tiger moth. Adults are active during spring months in forested glens on hilltops. An emergence estimated at nearly 1,000 individuals was observed on Taipa Island in early May in which adults were observed feeding upon the white blossoms of *Homalium* trees and blooms of *Abarema lucida*. Mating has been observed near dusk. Larvae have been reared on *Celastrus hindsii* (Pers. comm., M. Bascombe)

### Lymantridae

*Lymantria dissoluta* Swinhoe, 11 June on outside of library.

### Noctuidae

*Eligma narcissus* Cramer, 28 September near skyway lobby on the outside wall of the building.

*Ophideres fullonica* Linnaeus, 1 August on outside wall of Tai Fung building.

*Speiredonia retorta* Linnaeus, 1 August on wall of Block I building.

### Nymphalidae

*Hestina assimilis* (Linnaeus), red ring skirt, 3 November in temporary classroom corridor.

*Neptis columella* (Cramer), the short banded sailor, 25 May in table tennis room. This species was reported as common in Hong Kong (Hill *et al.*, 1978).

### Pieridae

*Delias aglaja* (Linnaeus), the black jezebel, 13 April near the Hovione pharmaceutical factory, Taipa Island.

### Papilionidae

*Graphium agamemnon* (Linnaeus), the tailed green jay, 25 March in park operated by the Agriculture and Forestry department, Coloane Island.

*Papilio demoleus* Linnaeus, the lime butterfly, 31 July in temporary classroom corridor.

### Sphingidae

*Gurelca hyas* Walker, November in temporary classroom corridor.

*Macroglossum sitiene* Walker, July, November in classroom corridor.

*Theretra silhetensis* Walker, 23 June, 3 January on outside wall of Block I building near skyway lobby.

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<sup>3</sup>Name of describer of species not possible to be obtained by author of paper due to limited research resources.

**Uranidae**

*Lyssa menoetius* Hopffer, 2 August on side of building in city of Macau. This moth was listed as a species of *Nyctalemon* earlier by Hill *et al.* (1982) in Hong Kong and Anon (1982/83) in southern China.

**DIPTERA**  
**Calliphoridae**

*Chrysomya megacephala* Fabricius, common during winter months on campus buildings. This fly is often seen near accumulations of organic matter and attracted to decaying animal carcasses.

**Culicidae**

*Armigeres magnus* (Theobald), is found almost throughout the year as larvae inhabiting the leaves of *Nepenthes mirabilis* along a hiking trail on the island of Taipa. Ramos (1990) lists it from the same plant leaves on the island of Coloane.

*Armigeres subalbatus* (Coquillett), May, June on outside windows near the library and cultural center on campus in the early morning.

*Culex sumatranus* Brug, was found in a similar environment as *A. magnus* above in leaves of *N. mirabilis* on Taipa Island where adequate drainage occurs on vegetated slopes. Ramos (*op cit.*) lists it from Coloane Island where it occupies similar habitats.

**Streblidae**

*Raymondia pagodarum* Speiser, 19 November in the fur of *Miniopterus schreibersi*, common bent-winged bat inhabiting Choc-Van Cave on Coloane Island.

**Syrphidae**

*Eristalis* sp. 8 January, adult in temporary classroom corridor while larva was found in polluted drainage before emptying into the Pearl River delta.

**COLEOPTERA**  
**Buprestidae**

*Chalcophora japonica chinensis* Schauff, the golden buprestid, 31 October on the Guia Hill jogging track, Macau Peninsula. This species is believed to feed as larvae on *Pinus mansoniana* (Lee and Winney, 1981).

**Cerambycidae**

*Aeolesthes induta* (Newman), 5 April on outside wall of Block I building.

*Aristobia approximator* (Thomson), 27 September on floor of skyway lobby.

*Pyrestes haematica* Pascoe, 28 March, 24 April on wall of Block I building.

*Chelidonium sinense* (Hope), blue bamboo longhorn beetle, 28 May on wall of Tai Fung building; 30 May outside classroom CLG 401.

*Chlorophorus annularis* (F.), the bamboo longhorn, 28 May on outside wall of Tai Fung building; 18 June near library. This species was particularly common during 1990 and may have emerged from the numerous bamboo poles used in the scaffolding of new buildings that were being constructed next to the campus.

*Xystrocera globosa* (Olivier), 9 April, 5 May on outside wall of Block I building.

#### Chrysomelidae

*Nisotra orbiculata* (Motschulsky) August ex *Hybiscus rosa-sinensis* blooms on Coloane Island, Pun Wing Wah, leg.

#### Curculionidae

*Odioporus longicollis* (Olivier), banana stem weevil, 17 June in temporary classroom corridor.

#### Dytiscidae

*Eretes sticticus* (Linnaeus), September on floor outside of K.C. Wong building.

#### Meloidae

*Epicauta tibialis* Waterhouse, the black blister beetle, 5 May on unpaved secondary road through cemetery on Taipa Island.

*Mylabris phalerata* Pallas, large yellow-banded blister beetle, 9-29 August ex *Hybiscus rosa-sinensis* blooms growing along a fence line near the cemetery on Taipa Island. The adults have been observed feeding on the flowers of this bush and in Hong Kong, Hill and Cheung (1978) have reported it as defoliating *Hybiscus* plants.

#### Scarabaeidae

*Anomala antiqua* (Gyllenhal), 15 June on the floor outside of Tai Fung building.

*Apogonia cribricollis* Burmeister, 4 June on the floor outside of the Tai Fung building.

*Holotrichia geilenkensei* Brenske, the brown cockchafer, 25 March on floor inside block I building; 29 March on floor outside of K.C. Wong building and 11 May on wall of Tai Fung building. This is one of the most abundant insects observed on campus floors during the spring of the year. Larvae are subterranean feeding on plant roots (Hill, 1982).

#### Staphylinidae

*Anatylus tetrocarinatus* Block, 16 March beneath human excrement on Taipa Island.

*Philonthus longicornis* Stephens, 20 March beneath decaying carcass of domestic housecat, Taipa Island.

## Tenebrionidae

*Strongylium erythrocephalum* Fabricius, red-legged darkling beetle. 22 May on floor of skyway lobby; 23, 30 June on wall outside of classroom CLG 401. In Hong Kong Hill (1982) claimed that this species occurs occasionally on vegetation in large numbers.

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